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Perspectives in Disease Prevention and Health Promotion

Progress Toward Achieving the 1990 National Objectives for Physical Fitness and Exercise

Eleven of the 1990 health objectives for the nation address physical fitness and exercise. These 11 objectives target specific reductions in risk, improvements in public and professional awareness, availability of services, and surveillance systems. A status review in 1985 indicated that two objectives had been achieved or were on track for achievement by 1990, and seven were judged as unlikely to be achieved; data were unavailable to assess progress toward two objectives (*1*). This article summarizes progress through June 1988.

REDUCTION OF RISK

By 1990, the proportion of children and adolescents ages 10 to 17 participating regularly in appropriate physical activities, particularly cardiorespiratory fitness programs which can be carried into adulthood, should be >90%.

This objective is unlikely to be met. The 1984 National Children and Youth Fitness Study (NCYFS) (*2*) found that 66% of children ages 10–17 were participating at the level recommended by the 1990 objective. The recommended level is at least three or more times/week for at least 20 minutes/session in an activity that is likely to be done as an adult, that involves large-muscle groups in dynamic contractions, and that requires 60% or more of cardiorespiratory capacity.

By 1990, the proportion of children and adolescents ages 10 to 17 participating in daily school physical education programs should be >60%.

This objective is unlikely to be met. In 1984, the NCYFS found that 36% of children 10–17 years old in grades 5–12 had daily physical education classes. In 1974–1975, an estimated 33% had daily classes. Achieving this 1990 objective will require different strategies for different grades. In 1984, >90% of children in grades 5–8 were enrolled in physical education classes, but fewer than half had daily physical education classes. In contrast, the proportion of children in grades 9–12 enrolled in physical education classes ranged from 81% in grade 9 to 52% in grade 12; more than half of

Physical Fitness — Continued

those enrolled had daily physical education classes. Thus, to achieve this objective by 1990, physical education classes need to be more frequent for grades 5–8, and enrollment needs to be increased for grades 9–12.

By 1990, the proportion of adults 18 to 65 participating regularly in vigorous physical exercise should be >60%.

This objective is unlikely to be met. At the midcourse review in 1985, an estimated 10%–20% of adults were participating at the level recommended in the 1990 objective. Data from the 1984–1987 Behavioral Risk Factor Surveillance System (BRFSS) surveys and the 1985 National Health Interview Survey (NHIS) have shown that only about 8% of adults are participating regularly at the level recommended in the 1990 objectives (*3*).

By 1990, 50% of adults ≥65 years should be engaging in appropriate physical activity, e.g., regular walking, swimming, or other aerobic activity.

This objective is unlikely to be met. In 1975, an estimated 35% of adults ≥65 years of age took regular walks. In the 1985 NHIS, 46% of this population reported walking for exercise. However, only 8% walked or participated in other physical activities often enough or long enough to meet the definition of appropriate physical activity recommended in the 1990 objectives (*3*).

PUBLIC/PROFESSIONAL AWARENESS

By 1990, the proportion of adults who can accurately identify the variety and duration of exercise thought to promote most effectively cardiovascular fitness should be >70%.

This objective is unlikely to be met. In the 1985 NHIS, when adults >18 years of age were asked about the characteristics of exercise needed to strengthen the heart and lungs, 39% reported that exercise should be done 3–4 days/week; 23%, for 15–25 minutes/occasion; and 34%, so that the heart rate and breathing are "a lot faster but talking is possible." All three questions were correctly answered by 5%.

By 1990, the proportion of primary-care physicians who include a careful exercise history as part of their initial examination of new patients should be >50%.

On the basis of limited data, this objective may have been achieved. In 1981, 47% of primary-care physicians in Massachusetts and Maryland reported that they "routinely" ask patients about exercise behavior.

SERVICES/PROTECTION

By 1990, the proportion of employees of companies and institutions with over 500 employees offering employer-sponsored fitness programs should be >25%.

This objective appears to have been met. In 1979, only 3% of such companies had formally organized fitness programs. By 1985, 32% of the worksites with 250–749 employees and 54% of the worksites with ≥750 employees reported offering employer-sponsored fitness programs (*4*).

SURVEILLANCE/EVALUATION SYSTEMS

By 1990, a methodology for systematically assessing the physical fitness of children should be established, with at least 70% of children and adolescents ages 10 to 17 participating in such an assessment.

This objective has two targets: 1) the development of methods to assess the fitness of children and 2) widespread participation by children in the assessment. The first

Physical Fitness — Continued

target has been achieved. At least three tests of youth physical fitness, including national norms, are available (*5–7*). However, reliable estimates of the number of children participating in such tests are not available.

By 1990, data should be available with which to evaluate the short- and long-term health effects of participation in programs of appropriate physical activity.

Progress toward this objective is difficult to evaluate. Since this objective was formulated in 1978, knowledge has increased substantially regarding the effects of physical activity on cardiovascular disease, hypertension, osteoporosis, diabetes, colon cancer, weight management, and depression. However, many questions about the health effects of physical activity remain unanswered (Table 1).

TABLE 1. Issues concerning physical activity and health

Established health effects	Remaining questions
1. Reduces the risk of coronary heart disease (CHD) among working-aged men (*8*).	• What is the relative importance of very vigorous activity and of moderate activity in preventing CHD? • Do women and older men receive the same benefits? • How soon do sedentary persons who become active begin to benefit from a reduced risk of CHD?
2. Helps maintain appropriate body weight (*9*).	
3. Reduces the risk of hypertension (*10*).	• What is the relative importance of very vigorous activity and of moderate activity?
4. Increases the mineral content of bones (*11*).	• Is the increased mineral content associated with a reduced risk of fractures?
5. Reduces the prevalence and incidence of anxiety and depressive symptoms (*12,13*).	• Is there an associated reduction in depression-related suicides or hospitalizations?
6. Causes musculoskeletal injuries (*14*).	• Are the incidence and severity of musculoskeletal injuries among physically active persons any different from those for inactive persons? • Is the incidence or the clinical severity of osteoarthritis increased among physically active persons?
Presumed health effects	**Remaining questions**
1. Reduces the incidence and severity of low back pain.	• Does regular participation in activities that improve the strength and flexibility of the muscles of the trunk influence the incidence, severity, or length of disability of low back pain?
2. Maintains functional ability of elderly persons.	• Does regular participation in activities that improve strength and flexibility influence the ability of individuals ≥65 years to maintain functional independence?

Physical Fitness — Continued

By 1990, data should be available to evaluate the effects of participation in programs of physical fitness on job performance and health-care costs.

Progress toward this objective is difficult to evaluate. Although several studies have been conducted to assess the effects of physical fitness on job performance and health-care costs, substantive concerns about study design constrain firm conclusions. Other problems include the lack of standard operational definitions for job performance and health-care costs and the lack of comparability between measures.

By 1990, data should be available for regular monitoring of national trends and patterns of participation in physical activity, including participation in public recreation programs in community facilities.

The first part of this objective has been met. Surveys have been implemented or are planned to monitor national trends and patterns of participation in physical activity. These surveys include the 1985 health promotion supplement to the NHIS, the BRFSS, and the National Health and Nutrition Examination Survey III. No information is available about participation in public recreation programs in community facilities, and no surveys are planned.

Reported by: The President's Council on Physical Fitness and Sports. Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, Public Health Service. Cardiovascular Health Br, Div of Chronic Disease Control and Community Intervention, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Documentation of the health benefits of regular physical activity has increased, and methods to systematically track and describe patterns of physical activity in the United States have improved greatly. Evidence indicates that regular physical activity reduces the incidence of and/or is otherwise beneficial to many medical conditions—including coronary heart disease, colon cancer, osteoporosis, hypertension, depression, diabetes mellitus, and obesity. Most data about the relationship between physical activity and colon cancer have appeared within the past decade (*15*) and suggest that regular physical activity may reduce the risk of colon cancer as much as 50%. Because general relationships between physical activity and specific medical conditions have been established, research efforts can now be focused on more specific questions (Table 1).

Although objectives for participation in regular physical activity will not be fully met, systems to regularly assess the level of participation have been implemented. In 1985, CDC's National Center for Health Statistics included questions about physical activity in the NHIS. The same questions will be used in the 1990 survey. In addition, CDC's Center for Chronic Disease Prevention and Health Promotion has used the BRFSS to assist state health departments in monitoring levels of participation in leisure-time physical activity.

In the past decade, evidence has suggested that the benefits of regular physical activity accrue at lower levels of intensity than those required to meet the standard set in the 1990 objectives (*16,17*). For example, although <10% of the adult population meet the definition for "appropriate physical activity" suggested in the 1990 objectives, another 34% are regularly active (i.e., at least three 20-minute sessions/week) but at levels of intensity that are lower than the objectives recommend. Members of this latter group also appear to be receiving some health benefits. The national health objectives for the year 2000 will address the benefits from moderate-intensity physical activity and encourage greater participation at both moderate and vigorous levels.

Physical Fitness — Continued

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Epidemiologic Notes and Reports

B Virus Infections in Humans — Michigan

In June 1989, two men were admitted to a Kalamazoo, Michigan, hospital with B virus (*Herpesvirus simiae*) infection. Both men worked at an animal research facility with rhesus (*Macaca mulatta*) and cynomolgus (*Macaca fascicularis*) monkeys.

Patient 1, a 23-year-old, had worked at the facility for 2 years. Since April, he had sustained monkey bites to hands and arms, and one bite to the chest wall. On June 10, pain and numbness developed on the right side of his back and then spread locally. Over the next 2 days, dysesthesia developed in the lower limbs, along with generalized weakness, dizziness, difficulty in swallowing, and copious oral secretions.

B Virus Infection -- Continued

On June 13, the patient collapsed and had a respiratory arrest. Examination at the hospital revealed bilateral conjunctivitis, depressed gag reflex, right-sided weakness, and small vesicular lesions on the right side of his chest; his cerebrospinal fluid (CSF) had a neutrophilic pleocytosis and an elevated protein level. He was mechanically ventilated and given high-dose intravenous acyclovir (15 mg/kg every 8 h). Magnetic resonance imaging (MRI) showed abnormalities of the thalamus, midbrain, pons, and upper spinal cord. B virus was cultured from the vesicular chest lesions. Total paralysis and coma rapidly ensued, and he died on June 20.

Patient 2, a 20-year-old, had worked at the research facility from May 22 to June 2. On approximately May 30, a monkey bit the man's right thumb. On June 15, he had fever and chills. Subsequent symptoms included severe headaches, myalgia, difficulty in urinating, paresthesia, and dizziness. When admitted to the hospital on June 20, the patient had a temperature of 104 F and his CSF contained numerous lymphocytes. Treatment with intravenous acyclovir (15 mg/kg every 8 h) was begun. Western blot of his CSF was consistent with B virus IgM and IgG antibodies. Culture of a biopsy specimen from the healed bite wound was inconclusive; further virologic studies are pending. On June 23, his treatment was changed to intravenous ganciclovir (5 mg/kg every 12 h). MRI scans showed subtle defects in the thalamus and midbrain. As of July 5, Patient 2 remained clinically stable, without fever or headache and with decreasing paresthesia.

Active surveillance has been instituted for approximately 135 current or former employees of the research facility who have had contact with monkeys or monkey tissue since mid-April. In addition, persons who are likely to have had contact with body fluids from either patient during the week before onset of symptoms are being monitored for evidence of B virus infection.

Reported by: DS Davenport, MD, SC Ross, MD; GA Stoltman, PhD, Kalamazoo County Health Dept, Kalamazoo; BA Kintner, DVM, HB McGee, MPH, WN Hall, MD, GR Anderson, DVM, KR Wilcox Jr, MD, State Epidemiologist, Michigan Dept of Public Health. JK Hilliard, PhD, Southwest Foundation for Biomedical Research, San Antonio, Texas. Div of Viral Diseases, Center for Infectious Diseases; Div of Field Svcs, Epidemiology Program Office, CDC.

Editorial Note: B virus infection is common and relatively benign in Old World monkeys such as rhesus and cynomolgus; however, this virus is highly pathogenic in humans (*1*). The two cases in Michigan are the first symptomatic human cases reported since 1987. A cluster of four cases in Florida in 1987 (*2*) prompted CDC to convene a working group to formulate new guidelines for the prevention of B virus infection in monkey handlers (*3*).

In efforts to adhere to these guidelines, training of all persons who handle monkeys or monkey tissues is particularly important. Such training must include the following: prevention of monkey-inflicted wounds, appropriate care of such wounds when they occur, signs and symptoms that might indicate human infection with B virus, and recognition of the severity of such infection.

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International Notes

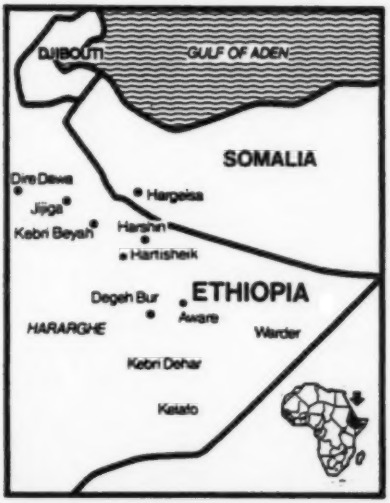
Nutritional Status of Somali Refugees — Eastern Ethiopia, September 1988–May 1989

In summer 1988, as many as 400,000 refugees from northern Somalia entered remote areas of eastern Ethiopia. The refugees were settled in one camp near the hamlet of Hartisheik, one camp in Harshin (about 50 km beyond Hartisheik), and three camps near Aware. There are no wells at any of these locations; however, water can be trucked approximately 100 km from the town of Jijiga (Figure 1).

As part of routine nutritional surveillance in the camps, cluster sample surveys (to measure weight-for-height [Wt/Ht]) of children <5 years of age were done in Hartisheik and Harshin between September 1988 and May 1989 (Table 1, see page 461) (*1*). The surveys were carried out by Save the Children Fund (SCF) (United Kingdom), a private voluntary organization working in collaboration with the Ethiopian government and United Nations (U.N.) agencies. Moderate malnutrition was defined as Wt/Ht between 70% and 79% of the median of the reference population; severe malnutrition, as <70%. Only 40% of children identified in the January survey as either moderately or severely malnourished were registered in supplementary feeding programs in the camps.

Also, SCF performed a mass screening of all children <5 years of age in Hartisheik in January–February 1989, using mid-upper arm circumference (MUAC) as the anthropometric measurement. When a MUAC of <13.5 cm was used as the cutoff value, 28.7% of the 11,191 children screened were found to be moderately or severely malnourished, a finding similar to that in the March survey. During the mass

FIGURE 1. Location of refugee camps in eastern Ethiopia



Somali Refugees — Continued

screening, 66,663 persons of all ages were examined by trained community health workers; 1437 refugees (2.1%) were found to have symptoms and/or signs suggestive of clinical scurvy (i.e., bleeding gums and painful, swollen joints). Of a subsample of 538 of these persons, 350 (65%) had the diagnosis of scurvy confirmed by a physician. Thus, the prevalence of scurvy by clinical examination was approximately 1%–2% in Hartisheik. Although mortality reporting was not comprehensive for September 1988–May 1989, 60 cases of hepatitis and four hepatitis-related deaths were reported in March. Identification of the type of hepatitis was not possible; however, enterically transmitted non-A, non-B hepatitis has previously been reported among East African refugees (*2*).

(Continued on page 461)

TABLE I. Summary — cases of specified notifiable diseases, United States

Disease	26th Week Ending			Cumulative, 26th Week Ending		
	July 1, 1989	July 2, 1988	Median 1984-1988	July 1, 1989	July 2, 1988	Median 1984-1988
Acquired Immunodeficiency Syndrome (AIDS)	816	U*	254	16,911	15,141	6,192
Aseptic meningitis	142	125	188	2,307	2,274	2,274
Encephalitis: Primary (arthropod-borne & unspec)	8	12	18	293	354	415
Post-infectious	-	4	3	46	59	62
Gonorrhea: Civilian	9,374	14,284	15,580	320,548	331,832	399,702
Military	156	190	308	5,355	5,948	8,219
Hepatitis: Type A	386	474	426	16,796	12,223	10,962
Type B	372	431	460	10,922	10,985	12,454
Non A, Non B	35	45	69	1,162	1,320	1,790
Unspecified	24	51	95	1,253	1,062	2,352
Legionellosis	26	23	21	420	459	333
Leprosy	2	1	6	74	91	118
Malaria	14	22	20	531	373	386
Measles: Total†	180	37	99	7,335	1,529	1,839
Indigenous	178	35	90	6,990	1,363	1,586
Imported	2	2	7	345	166	213
Meningococcal infections	33	47	41	1,613	1,757	1,672
Mumps	38	101	101	3,001	2,979	2,386
Pertussis	43	42	41	1,057	1,127	1,005
Rubella (German measles)	14	4	6	212	120	321
Syphilis (Primary & Secondary): Civilian	507	731	674	19,570	18,876	13,965
Military	3	2	4	125	89	94
Toxic Shock syndrome	10	7	7	186	160	175
Tuberculosis	421	435	448	10,235	9,923	10,323
Tularemia	7	6	5	46	84	74
Typhoid Fever	7	6	5	211	177	158
Typhus fever, tick-borne (RMSF)	23	30	34	183	193	234
Rabies, animal	43	92	95	2,290	2,097	2,549

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1989		Cum. 1989
Anthrax	-	Leptospirosis (Hawaii 1)	56
Botulism: Foodborne (Wash. 6)	12	Plague (N.M. 1)	1
Infant	7	Poliomyelitis, Paralytic	-
Other	5	Psittacosis (Calif. 2)	50
Brucellosis (Upstate NY 1, Okla. 1, Tex. 1)	39	Rabies, human	1
Cholera	-	Tetanus (Upstate NY 1, Minn. 1, Calif. 1)	26
Congenital rubella syndrome	1	Trichinosis (Hawaii 1)	13
Congenital syphilis, ages < 1 year	-		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†There were no cases of internationally imported measles reported for this week.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending July 1, 1989 and July 2, 1988 (26th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	16,911	2,307	293	46	320,548	331,832	16,796	10,922	1,162	1,253	420	74
NEW ENGLAND	715	110	9	2	9,360	9,687	362	544	48	51	31	5
Maine	33	7	4	-	137	201	8	21	3	1	5	-
N.H.	27	11	-	-	73	137	35	31	8	4	-	-
Vt.	8	6	-	-	36	76	21	39	5	-	-	-
Mass.	379	36	3	2	3,503	3,389	110	334	23	35	19	3
R.I.	38	26	-	-	679	906	23	42	3	3	7	1
Conn.	230	24	2	-	4,932	4,979	165	77	6	8	-	1
MID. ATLANTIC	4,971	259	47	5	43,181	53,254	2,101	1,706	98	167	102	9
Upstate N.Y.	558	114	14	4	7,602	6,659	504	354	44	6	33	1
N.Y. City	2,568	43	2	1	19,947	24,453	175	643	18	139	11	6
N.J.	1,238	-	31	-	6,986	7,482	222	299	11	5	18	1
Pa.	607	102	-	-	8,637	14,660	1,200	410	25	17	40	1
E.N. CENTRAL	1,387	324	85	2	55,711	52,000	908	1,271	116	47	113	2
Ohio	257	74	19	1	16,157	11,797	206	286	20	10	63	-
Ind.	242	60	20	-	4,448	4,283	70	203	17	15	18	1
Ill.	570	66	20	1	17,946	14,691	421	342	34	13	10	1
Mich.	250	114	21	-	15,575	16,677	162	343	33	9	18	-
Wis.	68	10	5	-	2,586	4,552	47	97	12	-	4	-
W.N. CENTRAL	391	97	12	2	15,225	13,492	560	484	50	12	19	1
Minn.	86	5	-	1	1,555	1,813	57	55	10	3	2	-
Iowa	32	18	3	-	1,260	1,016	43	22	9	-	4	-
Mo.	180	30	-	-	9,013	7,671	320	333	18	5	6	-
N. Dak.	3	4	1	-	66	88	4	16	3	-	1	-
S. Dak.	4	6	2	-	133	208	4	6	4	-	-	-
Nebr.	15	6	2	-	805	760	53	14	-	2	2	1
Kans.	71	28	4	1	2,394	1,876	79	38	6	2	4	-
S. ATLANTIC	3,444	477	41	17	90,377	93,945	1,436	2,148	163	189	58	-
Del.	48	13	1	-	1,485	1,371	25	77	2	2	5	-
Md.	324	59	10	2	9,970	9,641	360	368	18	20	13	-
D.C.	290	6	-	-	5,755	6,931	2	14	2	-	-	-
Va.	235	72	19	-	7,638	6,592	169	145	26	122	2	-
W. Va.	25	6	6	-	658	660	10	43	3	3	-	-
N.C.	277	58	1	1	13,554	13,454	237	509	49	-	19	-
S.C.	161	11	-	-	8,257	7,060	25	292	3	7	3	-
Ga.	534	43	1	-	17,356	18,030	158	227	9	6	7	-
Fla.	1,550	209	3	14	25,704	30,206	450	473	51	29	9	-
E.S. CENTRAL	389	236	17	1	26,350	25,683	207	810	92	3	17	-
Ky.	62	63	6	1	2,523	2,508	63	217	27	2	3	-
Tenn.	129	36	-	-	8,569	8,569	83	433	20	-	9	-
Ala.	112	101	11	-	8,459	8,126	40	110	41	1	5	-
Miss.	86	36	-	-	6,799	6,480	21	50	4	-	-	-
W.S. CENTRAL	1,538	248	32	2	34,424	37,620	1,925	1,059	78	294	21	13
Ark.	46	8	-	-	3,672	3,519	117	38	4	3	1	-
La.	227	18	6	-	7,227	7,736	144	188	9	1	4	-
Okla.	76	29	7	-	2,960	3,376	200	99	16	16	13	-
Tex.	1,189	193	19	2	20,565	22,989	1,464	734	49	274	3	13
MOUNTAIN	516	87	7	2	6,909	7,255	2,348	668	124	90	22	1
Mont.	9	3	-	-	100	232	28	24	2	1	2	1
Idaho	14	-	-	1	96	194	86	53	8	2	-	-
Wyo.	11	1	-	-	50	111	21	4	2	-	-	-
Colo.	169	39	1	1	1,485	1,736	308	100	41	37	2	-
N. Mex.	40	6	1	-	706	646	308	98	24	2	2	-
Ariz.	146	27	2	-	2,587	2,556	1,185	230	25	41	9	-
Utah	35	9	1	-	222	288	206	54	13	3	4	-
Nev.	92	2	2	-	1,663	1,492	206	105	9	4	3	-
PACIFIC	3,560	469	43	13	39,011	38,896	6,949	2,232	393	400	37	43
Wash.	308	-	1	1	3,024	3,460	1,611	459	113	27	9	4
Oreg.	117	-	-	-	1,480	1,556	1,226	242	43	8	1	1
Calif.	3,067	443	37	12	33,787	33,009	3,573	1,457	229	359	24	34
Alaska	5	5	4	-	467	533	430	29	5	2	1	-
Hawaii	63	21	1	-	253	339	109	45	3	4	2	4
Guam	1	-	-	-	-	82	-	-	-	-	-	-
P.R.	783	55	2	-	561	726	89	120	11	11	-	6
V.I.	22	-	-	-	340	203	-	4	-	-	-	-
Amer. Samoa	-	-	-	-	-	46	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	33	-	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending July 1, 1989 and July 2, 1988 (26th Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1989	1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	Cum. 1988	1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	1989	Cum. 1989	Cum. 1988
UNITED STATES	531	178	6,990	2	345	1,529	1,613	38	3,001	43	1,057	1,127	14	212	120
NEW ENGLAND	32	10	215	1	21	104	112	1	29	7	223	143	-	5	1
Maine	-	-	-	-	-	7	13	-	-	-	4	11	-	-	-
N.H.	2	-	8	-	-	87	13	-	10	-	5	29	-	3	-
Vt.	1	-	1	-	-	-	6	-	-	-	6	2	-	1	-
Mass.	20	7	24	-	16	1	53	1	18	1	191	90	-	1	-
R.I.	5	3	39	1§	3	-	1	-	-	6	8	2	-	-	1
Conn.	4	-	144	-	2	9	26	-	1	-	9	9	-	-	-
MID. ATLANTIC	87	-	457	-	154	504	238	2	171	-	62	53	-	10	11
Upstate N.Y.	17	-	40	-	93	17	79	2	104	-	33	34	-	2	2
N.Y. City	27	-	46	-	14	37	29	-	16	-	2	1	-	6	6
N.J.	21	-	271	-	-	14	53	-	11	-	14	4	-	-	1
Pa.	22	U	100	U	47	436	77	U	40	U	13	14	U	-	2
E.N. CENTRAL	35	3	1,155	1	43	159	199	4	244	3	39	136	-	18	22
Ohio	7	-	626	-	35	23	83	-	8	-	1	25	-	3	-
Ind.	5	U	33	U	-	50	22	U	18	U	8	50	U	-	-
Ill.	15	-	489	-	-	68	57	-	104	-	-	13	-	13	18
Mich.	6	3	7	1§	6	18	30	4	100	3	23	19	-	1	4
Wis.	2	-	-	-	2	-	7	-	14	-	7	29	-	1	-
W.N. CENTRAL	16	29	456	-	4	10	51	4	348	-	29	49	-	4	-
Minn.	6	-	-	-	-	10	10	-	1	-	7	16	-	-	-
Iowa	2	-	4	-	1	-	2	2	21	-	10	14	-	-	-
Mo.	4	-	237	-	-	-	19	1	46	-	10	6	-	3	-
N. Dak.	1	-	-	-	-	-	-	-	-	-	-	7	-	-	-
S. Dak.	1	-	-	-	-	-	4	-	-	-	1	2	-	-	-
Nebr.	1	-	108	-	2	-	11	1	5	-	-	-	-	-	-
Kans.	1	29	107	-	1	-	5	-	275	-	1	4	-	1	-
S. ATLANTIC	91	4	378	-	26	240	265	3	530	-	85	116	-	7	14
Del.	3	-	58	-	1	-	2	-	1	-	1	3	-	-	-
Md.	17	-	36	-	15	7	44	2	321	-	9	22	-	2	-
D.C.	4	U	7	U	3	-	12	U	75	U	-	-	U	-	-
Va.	16	-	18	-	3	134	28	-	65	-	6	16	-	-	11
W. Va.	2	-	28	-	-	6	9	-	9	-	11	3	-	-	-
N.C.	11	-	167	-	-	1	36	-	16	-	18	33	-	1	-
S.C.	3	-	-	-	-	-	15	1	17	-	-	-	-	-	-
Ga.	6	-	-	-	-	-	52	-	7	-	10	17	-	-	-
Fla.	29	4	63	-	3	92	67	-	19	-	30	22	-	4	3
E.S. CENTRAL	6	8	110	-	-	60	49	-	98	1	39	17	-	2	-
Ky.	-	8	10	-	-	32	30	-	9	-	1	-	-	-	-
Tenn.	-	-	57	-	-	-	3	-	28	-	9	10	-	2	-
Ala.	4	-	43	-	-	-	13	-	13	1	27	5	-	-	-
Miss.	2	-	-	-	-	28	3	N	N	-	2	2	-	-	-
W.S. CENTRAL	25	124	2,840	-	38	14	109	12	1,141	18	74	66	11	23	6
Ark.	-	-	-	-	2	1	6	5	114	-	11	5	-	1	2
La.	1	-	6	-	-	-	26	-	441	1	5	10	-	5	-
Okla.	4	6	106	-	-	6	13	-	165	-	13	24	-	1	1
Tex.	20	118	2,728	-	36	5	64	7	421	15	45	27	11	16	3
MOUNTAIN	16	-	168	-	19	116	44	2	111	7	356	338	1	31	5
Mont.	1	-	12	-	1	1	1	-	2	-	10	1	-	1	-
Idaho	2	-	-	-	2	1	2	1	9	6	44	248	-	28	-
Wyo.	1	-	-	-	-	-	-	-	7	-	-	1	1	1	-
Colo.	2	-	57	-	1	114	18	1	15	-	19	13	-	-	1
N. Mex.	1	-	16	-	15	-	-	N	N	-	6	6	-	-	-
Ariz.	6	-	47	-	-	-	19	-	71	-	268	46	-	-	-
Utah	-	-	36	-	-	-	4	-	3	1	8	22	-	-	3
Nev.	3	U	-	U	-	-	-	U	4	U	1	1	U	1	1
PACIFIC	223	-	1,213	-	41	322	546	10	329	9	150	209	2	112	61
Wash.	15	-	20	-	12	2	57	1	24	3	34	45	-	-	-
Oreg.	11	-	-	-	12	3	39	N	N	1	6	6	-	2	-
Calif.	190	-	1,177	-	12	310	445	9	294	5	108	111	2	89	48
Alaska	3	-	-	-	-	-	4	-	1	-	-	6	-	-	-
Hawaii	4	-	16	-	5	7	1	-	10	-	4	41	-	21	13
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	1
P.R.	1	-	410	-	-	189	4	1	8	-	3	8	-	6	1
V.I.	-	-	4	-	-	-	-	1	11	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.
N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending July 1, 1989 and July 2, 1988 (26th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	19,570	18,876	186	10,235	9,923	46	211	183	2,290
NEW ENGLAND	829	505	7	253	223	-	15	2	2
Maine	5	5	3	3	3	-	-	-	1
N.H.	3	6	-	15	6	-	-	-	-
Vt.	-	2	-	4	2	-	-	-	-
Mass.	254	205	1	133	133	-	7	-	-
R.I.	15	16	-	30	19	-	5	1	-
Conn.	552	271	3	68	60	-	3	1	1
MID. ATLANTIC	3,576	3,807	29	1,918	1,874	2	55	12	301
Upstate N.Y.	436	264	5	170	266	1	6	5	6
N.Y. City	1,782	2,408	2	1,091	933	-	37	1	-
N.J.	660	435	8	309	351	-	8	4	-
Pa.	718	700	14	348	324	1	4	2	295
E.N. CENTRAL	753	564	28	1,105	1,105	3	21	30	52
Ohio	54	60	7	208	213	-	4	16	2
Ind.	33	34	5	91	123	1	1	9	2
Ill.	376	260	5	480	449	-	12	4	10
Mich.	271	191	11	264	264	1	3	1	6
Wis.	20	19	-	62	56	1	1	-	32
W.N. CENTRAL	167	113	25	265	262	19	5	31	331
Minn.	13	8	7	53	42	-	1	-	62
Iowa	21	12	4	28	18	-	2	1	110
Mo.	87	68	4	115	132	11	1	30	24
N. Dak.	1	2	-	9	8	-	-	-	28
S. Dak.	-	-	3	13	21	5	-	-	55
Nebr.	17	17	5	10	9	-	-	-	22
Kans.	28	6	2	37	32	3	1	-	30
S. ATLANTIC	7,277	6,795	18	2,123	2,151	2	20	47	690
Del.	84	60	-	21	20	-	2	-	16
Md.	386	379	1	180	220	-	4	6	196
D.C.	431	328	1	82	89	-	2	-	2
Va.	267	221	4	187	206	2	3	3	145
W. Va.	9	7	-	40	41	-	-	-	31
N.C.	470	381	5	281	182	-	2	22	2
S.C.	387	335	3	242	243	-	-	8	114
Ga.	1,491	1,086	3	309	344	-	2	7	120
Fla.	3,772	3,998	1	801	806	-	5	1	64
E.S. CENTRAL	1,347	1,015	3	882	834	3	1	18	207
Ky.	31	35	1	209	209	1	1	5	94
Tenn.	603	448	1	264	227	1	-	11	65
Ala.	415	289	1	247	253	-	-	2	68
Miss.	298	245	-	172	146	1	-	-	-
W.S. CENTRAL	2,713	2,145	16	1,181	1,234	11	7	27	359
Ark.	168	111	1	131	134	5	-	7	48
La.	616	415	-	137	159	-	1	-	3
Okla.	46	83	10	99	118	6	1	19	53
Tex.	1,883	1,536	5	814	823	-	5	1	255
MOUNTAIN	364	369	22	231	255	3	3	14	112
Mont.	1	2	-	8	5	-	-	10	45
Idaho	1	-	2	8	2	-	-	-	-
Wyo.	4	1	1	-	1	-	-	1	32
Colo.	51	59	4	12	42	1	1	3	5
N. Mex.	17	25	2	43	48	-	-	-	15
Ariz.	116	95	9	112	119	-	1	-	13
Utah	11	10	3	24	10	2	1	-	1
Nev.	163	177	1	24	28	-	-	-	1
PACIFIC	2,544	3,563	38	2,267	1,985	3	84	2	236
Wash.	136	112	2	117	115	-	4	-	-
Oreg.	135	146	-	71	72	1	4	1	-
Calif.	2,264	3,277	35	1,977	1,693	2	74	1	176
Alaska	3	7	-	23	21	-	-	-	60
Hawaii	6	21	1	79	84	-	2	-	-
Guam	-	3	-	-	9	-	-	-	-
P.R.	277	328	-	151	105	-	-	-	31
V.I.	2	1	-	4	3	-	-	-	-
Amer. Samoa	-	-	-	-	3	-	-	-	-
C.N.M.I.	-	1	-	-	14	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending July 1, 1989 (26th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	584	404	104	42	18	16	51
Boston, Mass.	159	99	35	14	6	6	25
Bridgeport, Conn.	34	22	4	3	4	1	2
Cambridge, Mass.	19	16	1	2	-	-	-
Fall River, Mass.	30	23	4	1	2	-	1
Hartford, Conn.	54	31	13	5	3	2	4
Lowell, Mass.	12	6	4	1	1	-	2
Lynn, Mass.	19	15	2	1	1	-	-
New Bedford, Mass.	17	15	1	1	-	-	-
New Haven, Conn.	58	39	12	5	-	2	3
Providence, R.I.§	40	31	6	2	-	1	1
Somerville, Mass.	3	3	-	-	-	-	-
Springfield, Mass.§	41	29	8	2	-	2	4
Waterbury, Conn.	33	25	6	1	1	-	2
Worcester, Mass.	65	51	8	4	-	2	7
MID. ATLANTIC	2,417	1,580	453	276	65	40	121
Albany, N.Y.	39	26	7	4	1	1	-
Allentown, Pa.	18	10	5	3	-	-	1
Buffalo, N.Y.§	111	75	23	9	3	1	6
Camden, N.J.	30	16	6	5	3	-	1
Elizabeth, N.J.	18	11	4	2	1	-	1
Erie, Pa.†	46	35	6	4	-	1	5
Jersey City, N.J.	36	26	7	2	1	-	4
N.Y. City, N.Y.	1,384	870	264	193	38	19	57
Newark, N.J.	70	31	9	18	5	7	10
Paterson, N.J.	20	9	7	3	-	1	2
Philadelphia, Pa.	199	133	42	14	6	3	9
Pittsburgh, Pa.†	78	51	19	6	-	1	5
Reading, Pa.	27	25	2	-	-	-	4
Rochester, N.Y.	108	83	16	6	2	1	7
Schenectady, N.Y.	29	24	4	-	1	-	-
Scranton, Pa.†	36	31	2	1	2	-	2
Syracuse, N.Y.	87	65	15	3	-	4	3
Trenton, N.J.	33	25	4	2	1	1	2
Utica, N.Y.	22	17	5	-	-	-	1
Yonkers, N.Y.	26	17	6	1	1	-	1
E.N. CENTRAL	2,125	1,385	434	164	60	82	103
Akron, Ohio	44	30	5	5	1	3	-
Canton, Ohio	31	27	3	-	1	-	6
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	125	69	30	17	5	4	7
Cleveland, Ohio	163	103	38	14	2	6	6
Columbus, Ohio§	141	97	28	8	4	4	2
Dayton, Ohio	101	66	23	5	4	3	10
Detroit, Mich.	222	132	49	20	8	13	6
Evansville, Ind.	47	35	9	1	1	1	6
Fort Wayne, Ind.	43	33	7	1	-	2	3
Gary, Ind.	8	3	4	-	-	1	1
Grand Rapids, Mich.	37	26	4	3	2	2	9
Indianapolis, Ind.	158	93	32	17	6	10	1
Madison, Wis.	42	29	4	3	4	2	6
Milwaukee, Wis.	112	81	21	9	-	1	5
Peoria, Ill.	49	32	9	3	2	3	3
Rockford, Ill.	40	25	11	1	1	2	6
South Bend, Ind.	40	27	9	3	1	-	1
Toledo, Ohio	96	70	12	6	5	3	6
Youngstown, Ohio	62	45	11	3	3	-	3
W.N. CENTRAL	796	558	133	49	30	26	19
Des Moines, Iowa	70	42	16	7	3	2	5
Duluth, Minn.	31	21	4	4	1	1	-
Kansas City, Kans.	33	23	4	4	2	-	-
Kansas City, Mo.	127	87	28	6	1	5	-
Lincoln, Nebr.	33	22	7	1	3	-	1
Minneapolis, Minn.	170	129	25	9	2	5	7
Omaha, Nebr.	94	65	20	3	2	4	3
St. Louis, Mo.	127	91	14	8	9	5	-
St. Paul, Minn.	55	40	9	3	1	2	2
Wichita, Kans.	56	38	6	4	6	2	1
S. ATLANTIC	1,090	638	252	132	38	29	49
Atlanta, Ga.	138	74	32	23	4	5	2
Baltimore, Md.	294	169	68	33	7	7	16
Charlotte, N.C.	61	39	10	7	3	2	-
Jacksonville, Fla.	114	63	23	19	4	5	5
Miami, Fla.	121	67	31	16	6	1	1
Norfolk, Va.	59	33	16	5	2	3	6
Richmond, Va.	85	40	26	12	5	1	7
Savannah, Ga.	39	22	10	5	2	-	2
St. Petersburg, Fla.	86	61	17	3	3	2	3
Tampa, Fla.	67	48	8	7	2	2	7
Washington, D.C.	11	6	2	2	-	1	-
Wilmington, Del.	25	16	9	-	-	-	-
E.S. CENTRAL	772	492	177	69	20	24	44
Birmingham, Ala.	126	79	27	12	5	3	-
Chattanooga, Tenn.	33	19	8	4	2	-	1
Knoxville, Tenn.	91	60	24	4	2	1	4
Louisville, Ky.	94	56	21	9	4	4	7
Memphis, Tenn.	210	135	40	18	6	11	17
Mobile, Ala.	57	33	19	4	1	-	-
Montgomery, Ala.§	44	34	8	2	-	-	1
Nashville, Tenn.	117	76	30	6	-	5	14
W.S. CENTRAL	1,701	1,039	369	191	55	46	67
Austin, Tex.	53	34	10	7	1	1	4
Baton Rouge, La.	57	41	12	2	-	2	2
Corpus Christi, Tex.§	45	35	8	2	-	-	1
Dallas, Tex.	161	88	35	27	4	7	3
El Paso, Tex.	57	38	8	7	3	1	3
Fort Worth, Tex	95	55	19	10	5	6	4
Houston, Tex.§	734	436	169	89	24	16	18
Little Rock, Ark.	80	49	24	3	3	1	5
New Orleans, La.	72	39	16	11	4	2	-
San Antonio, Tex.	181	109	35	23	7	6	11
Shreveport, La.	82	53	17	6	3	3	11
Tulsa, Okla.	84	62	16	4	1	1	5
MOUNTAIN	687	447	119	65	31	25	30
Albuquerque, N. Mex.	85	55	11	10	7	2	4
Colo. Springs, Colo.	35	26	6	1	-	2	1
Denver, Colo.	120	77	18	18	7	-	5
Las Vegas, Nev.	97	64	25	4	2	2	9
Ogden, Utah	20	17	2	-	1	-	2
Phoenix, Ariz.	139	84	23	17	7	8	5
Pueblo, Colo.	22	18	-	1	-	3	-
Salt Lake City, Utah	55	34	11	4	5	1	-
Tucson, Ariz.	114	72	23	10	2	7	4
PACIFIC	1,844	1,182	336	196	65	56	121
Berkeley, Calif.	17	11	6	-	-	-	1
Fresno, Calif.	75	48	16	4	4	3	7
Glendale, Calif.	21	19	-	1	-	-	-
Honolulu, Hawaii	80	49	15	8	4	4	11
Long Beach, Calif.	76	48	12	10	2	4	9
Los Angeles Calif.	494	308	83	70	17	11	15
Oakland, Calif.	60	36	12	7	4	1	12
Pasadena, Calif.	35	26	3	4	1	1	6
Portland, Oreg.	140	100	27	8	1	4	4
Sacramento, Calif.	145	97	29	9	6	4	14
San Diego, Calif.	143	83	33	13	7	4	17
San Francisco, Calif.	161	97	25	32	3	4	4
San Jose, Calif.	175	109	35	19	5	7	14
Seattle, Wash.	129	81	24	9	8	7	2
Spokane, Wash.	49	37	9	1	1	1	3
Tacoma, Wash.	44	33	7	1	2	1	2
TOTAL	12,016††	7,725	2,377	1,174	382	344	605

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available. Figures are estimates based on average of past available 4 weeks.

Somali Refugees — Continued

Between the September and January surveys, deliveries of water to the camps improved; however, delivery of rations (cereal, vegetable oil, and legumes) to Hartisheik was intermittent. Lentils and vegetable oil were not available for regular food distributions, and cereal was the only consistent source of calories. In addition, incomplete census data for the camps contributed to delays in the distribution of rations; consequently, some families may have received only 10-day rations for 3- to 4-week periods.

Reported by: Save the Children Fund, London, United Kingdom. Bur for Refugee Programs, US Department of State. Technical Support Div, International Health Program Office; Div of Nutrition, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: In general, refugees are dependent on food rations provided by international donors and transported and distributed by U.N. agencies and the government of the host country. Periodic surveys continue to document the critical problem with malnutrition among Somali refugee children in two camps in eastern Ethiopia. The malnutrition prevalence rates reported for these Somali refugee children are higher than those reported among refugee populations in Malawi and Thailand but are generally comparable with those reported from Somalia and Sudan (Table 2) (*3*). Children with Wt/Ht measurements <80% of the World Health Organization reference population median are at increased risk of mortality (*4,5*). The malnutrition prevalence rates reported in Hartisheik (March and May) and Harshin (March) are similar to those in refugee situations in which high mortality has been documented (e.g., Somalia and Sudan) (*6*). Collection of mortality data in refugee emergencies is now a standard recommendation of the Office of the United Nations High Commissioner for Refugees (*7*). Mortality data are particularly important in settings in which malnutrition rates are high because deaths among the most malnourished can reduce the number and prevalence of malnourished survivors, thereby complicating interpretation of nutritional survey data by relief agencies and organizations (*8*).

Scurvy, a fatal illness if untreated, has occurred among different East African refugee populations in recent years (*9–12*)—at least in part because rations provided to refugees often fail to provide the minimum daily vitamin C requirement of 6 mg (*13*).

TABLE 1. Nutritional status of random cluster samples of Somali refugee children <5 years of age — Hartisheik and Harshin, Ethiopia, September 1988–May 1989

Camp	Month	Children surveyed	Proportion <80% Wt/Ht	Proportion <70% Wt/Ht
Hartisheik	Sept. 1988	1080	13.5%	1.8%
Hartisheik	Nov. 1988	1350	21.7%*	2.2%
Hartisheik	Jan. 1989	1350	16.9%†	2.3%
Hartisheik	Mar. 1989	1350	26.4%*	4.3%§
Hartisheik	May 1989	1350	22.9%	2.9%
Harshin	Jan. 1989	690	12.5%	1.8%
Harshin	Mar. 1989	810	29.5%*	4.9%¶
Harshin	May 1989	720	15.7%*	3.2%

*Differs from previous proportion, p<0.001.
†Differs from previous proportion, p<0.01.
§Differs from September 1988 data, p<0.001.
¶Differs from January 1989 data, p<0.001.

Somali Refugees — Continued

To a great extent, logistic difficulties in delivering sufficient quantities of vitamin C-containing foods (e.g., fresh vegetables and fruit) to refugees in remote regions of Africa may be responsible for this problem. Cereals enriched with vitamin C prior to shipment might help to reduce the occurrence of scurvy, although heat stability of vitamin C is known to be a problem.

Effective strategies to improve nutritional assessment and intervention at Hartisheik and Harshin could include 1) regular and complete distribution of rations—including foods that contain vitamin C, 2) expansion of the system of supplementary and therapeutic feeding programs to achieve better coverage of malnourished children, 3) more complete collection of mortality data, and 4) continued monitoring of children's nutritional status. As of June 1989, the weekly distribution of vitamin C tablets in these camps to all children <5 years of age and to pregnant and lactating women and the active enrollment of malnourished children in supplementary feeding programs have been instituted. The Ethiopia Ministry of Health has recently published a revised set of health relief management guidelines (*14*) that describe principles for the management of relief programs for refugees and disaster-affected populations. Because inaccurate refugee census data are associated with inequitable distribution of rations, sustained and coordinated efforts by all participating relief agencies will be required to solve this problem.

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TABLE 2. Percentage of sampled children <5 years of age with moderate or severe malnutrition in recent refugee populations (*3*)

Country and camp (date)	<80% weight-for-height
Ethiopia (May 1989)	
Hartisheik (n=1350)	23%
Malawi (June 1988)	
Nsanje (n=575)	6%
Thailand (November 1979)	
Sakeo	18%
Khao-I-Dang	5%
Somalia (May 1980)	
Sabacad	35%
Amalow	24%
Malke Hiday	26%
Sudan (January 1985)	
Wad Sherife	52%
Wad Kowli	32%

Somali Refugees – Continued

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Current Trends

Imported Dengue – United States, 1987

In 1987, 94 cases of imported dengue-like illness (i.e., illness following exposures thought to have occurred outside the United States) were reported to CDC from 29 states (Table 1). Eighteen cases (from 10 states and the District of Columbia) were serologically or virologically confirmed as dengue; 53 were serologically negative for dengue, and the etiology of 23 remained undetermined because only a single early serum sample was received.

Travel histories indicated that the confirmed dengue infections had been acquired in four countries in Latin America, three islands in the Caribbean, five countries in Asia, and one country in Africa (Table 1). The infecting virus serotype was determined for five patients: DEN-1 for patients infected in Mexico and Venezuela, DEN-2 for patients infected in Indonesia and India, and DEN-4 for a patient infected in El Salvador (Table 1). Among the 15 patients for whom age was reported, ages ranged from 22 to 79 years.

Each patient had a classical dengue syndrome with onset of illness occurring shortly after return to the United States. One patient, a 28-year-old man with a primary DEN-2 infection acquired in India, reported bloody diarrhea. No other hemorrhagic manifestations were reported.

Three of the confirmed cases were reported from Florida and Georgia, where the principal vector of dengue, *Aedes aegypti*, occurs.

Reported by: Participating state health departments. Dengue Br, Div of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Dengue is an acute viral disease caused by any of four dengue virus serotypes and manifested by sudden onset of fever, headache, and myalgia, and

Dengue — Continued

often by rash, nausea, and vomiting. Thrombocytopenia, as well as hemorrhagic manifestations such as petechiae, epistaxis, and menorrhagia, may also occur. Most infections result in relatively mild illness; however, a small percentage of patients may have a severe form of the disease, dengue hemorrhagic fever, which is characterized by severe hemorrhage and/or shock.

TABLE 1. Suspected and confirmed cases of dengue — United States, 1987

State	Total	Confirmed	Travel history of confirmed patients (serotype if known)
Alabama	2	0	
Arkansas	1	0	
California	5	1	Mexico (DEN-1)
Colorado	7	1	Puerto Rico
District of Columbia	3	1	Somalia
Florida	4	2	Puerto Rico, Thailand
Georgia	2	1	India
Idaho	1	1	Somalia
Illinois	2	0	
Indiana	1	0	
Iowa	2	1	Indonesia
Kansas	1	0	
Kentucky	1	0	
Maryland	5	0	
Massachusetts	9	2	Haiti, Venezuela (DEN-1)
Michigan	6	1	US Virgin Islands
Minnesota	1	0	
Mississippi	1	0	
Nebraska	1	0	
New Mexico	3	0	
New York	15	4	Colombia, Indonesia (DEN-2), Philippines, Somalia
North Carolina	2	0	
Ohio	7	3	El Salvador (DEN-4), India (DEN-2), Sri Lanka
Oregon	1	0	
Pennsylvania	1	0	
Tennessee	5	0	
Texas	1	0	
Utah	1	0	
Washington	3	0	
Total	**94**	**18**	

Dengue — Continued

Dengue fever is widespread in the Caribbean, tropical America, Oceania, Asia, and tropical Africa, and from 1977–1987 health-care providers in the continental United States reported an annual average of 31 patients with dengue acquired abroad (Table 2).

Because *Ae. aegypti*, the principal vector mosquito of dengue, is found in the southeastern United States, indigenous transmission of dengue in these areas is possible. The most recent known transmission within the continental United States occurred in 1986 in an area of Texas infested by *Ae. aegypti*. An Asian dengue vector, *Ae. albopictus*, has recently become established in focal areas of the eastern United States as far north as latitude 42 N; however, no case of disease transmission by this mosquito in the continental United States has been documented (*1*).

Public health officials and clinicians should be aware of the potential for dengue transmission in any area infested with dengue mosquito vectors. Dengue should be considered in the differential diagnosis for any patient with an acute febrile illness and a history of recent travel to tropical areas. If dengue is suspected, the patient's hematocrit and platelet count should be evaluated, and acute- (<5 days from onset) and convalescent-phase (≥14 days from onset) serum samples should be obtained. Suspected dengue should be reported and serum samples sent for confirmation through the state health department to: Dengue Branch, Division of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC, GPO Box 4532, San Juan, Puerto Rico 00936; telephone (809) 749-4400.

Reference

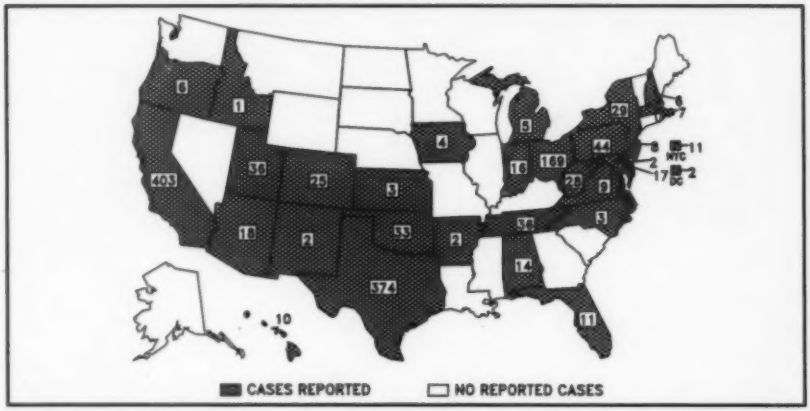
1. CDC. Update: *Aedes albopictus* infestation—United States, Mexico. MMWR 1989;38:440, 445–6.

TABLE 2. Suspected and confirmed dengue cases — United States,* 1977–1987

Year	Suspected cases reported to CDC	Confirmed cases	Dengue serotype	States with confirmed cases and *Ae. aegypti* or *Ae. albopictus*
1977	189	57		
1978	144	52		
1979	85	10		
1980†	343	45		
1981	201	44	1,4	3
1982	144	45	1,2,4	8
1983	107	27	1,2,3,4	1
1984	67	6	1,3	1
1985	48	8	1,4	2
1986†	233	33	1,2,4	5
1987	94	18	1,2,4	3
Total	**1655**	**345**		

*Excludes Puerto Rico, US Virgin Islands, and Pacific Territories.
†Year with indigenous transmission (special surveillance system initiated by Texas).

FIGURE I. Reported measles cases — United States, weeks 22-25, 1989



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Acting Director, Centers for Disease Control
Walter R. Dowdle, Ph.D.

Acting Director, Epidemiology Program Office
Michael B. Gregg, M.D.

Editor, *MMWR* Series
Richard A. Goodman, M.D., M.P.H.

Managing Editor
Karen L. Foster, M.A.

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